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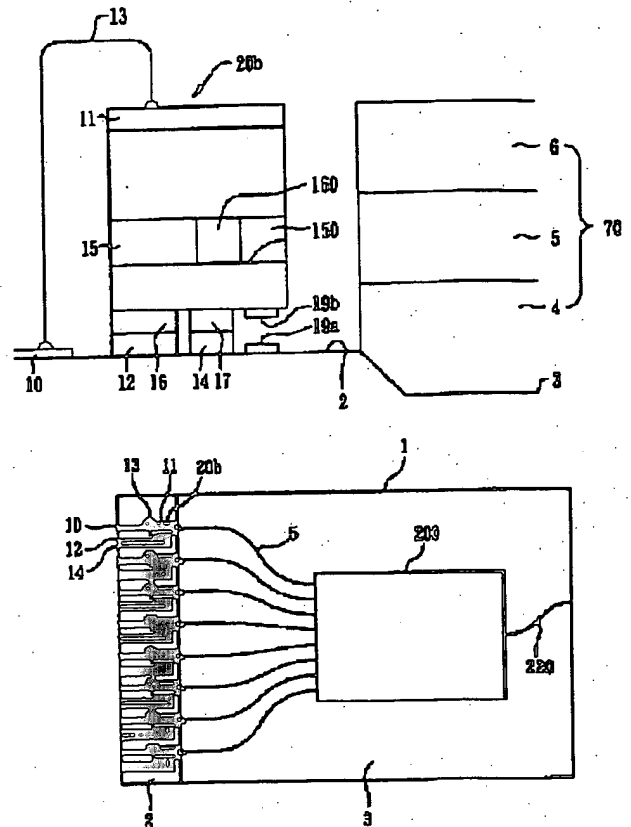
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TITLE : OPTICAL CIRCUIT FOR WAVELENGTH  
MULTIPLEXING COMMUNICATION



ABSTRACT : PROBLEM TO BE SOLVED: To provide a multi-wavelength laser light source, by which thermal crosstalk or mode hopping is reduced and an oscillation wavelength is stabilized, and to provide a miniaturized optical circuit for wavelength multiplexing communication by which the hybrid integration of a semiconductor laser chip on a plane quartz optical waveguide is performed without using the optical component of bulk.

SOLUTION: While using a silicon substrate 1 having a terrace part 2 and an etching part 3, plural single longitudinal mode distribution feedback type semiconductor laser chips 20b are mounted on the terrace part 2. Then, the etching part 3 is provided with plural cores 5 with built-in spot size converter 150 and electric field absorptive semiconductor light modulator 160 for propagating light emitted from the plural single longitudinal mode semiconductor laser chips 20b, multi-mode interference type light synthesizer 200, and one or more quartz optical waveguides 220 for output.

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